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ABSTRACT

This paper discusses the nature-nurture controversy concerning the origins of mental abilities. Specifically, the author looks at the viewpoint of Arthur Jensen and critically examines his work. This paper presents an overview of Jensen's position followed by a discussion of shortcomings in his methodology and research techniques. The author severely criticizes Jensen's failure to define terms to reduce ambiguity. The paper then critically describes Jensen's reliance on present intelligence testing methods. The manner in which Jensen uses the term, "race", is explored. His use of the concept "race and intelligence" is also discussed. The author concludes that Jensen is advocating "the genetic fallacy", and that those with a racist philosophy can use the Jensen argument to justify their position. The writer further concludes that Jensen has been generally unscientific and irresponsible in formulating his assumptions. (Author/BW)

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White I.Q. versus Black Intelligence

by Thomas O. Edwards

Once again the nature-nurture controversy concerning the origins of mental abilities has been revived. This periodic debate emerged in 1969 when Arthur Jensen published the article, "How much can we boost IQ and scholastic achievement". What was most unique about this revived argument was that Jensen supposedly had documented scientific evidence which explained the differential IQ score attained by black and white populations in the United States.

A quick overview of the context and the content of the Jensen article is appropriate. In this article Jensen began with an evaluation statement on the effectiveness of compensatory educational programs. These programs were designed to alleviate the discrepancies in scholastic achievement among different segments of the population. To Jensen these programs were failures because of their theoretical foundations. The theoretical assumptions had been based upon the social and philosophical notion that through education all persons could attain equal achievement. Jensen stated that the compensatory programs do not achieve this. The fact that the programs have failed to produce what was logically expected from them is seen by Jensen as a reflection of an incorrect theoretical framework. In other words, how can we expect equality in ability, when in fact, it does not exist.

It is from this perspective that Jensen proposed an alternative explanation of why compensatory education has failed. He stated that one's capacity or intelligence is partly determined by environmental factors and partly by natural determinants which he identified as genes. Jensen described race as a group that has distinctive genes. Since genes are partly responsible for intelligence, Jensen postulated that they may be responsible for the differential intelligence quotients obtained by Blacks and Whites on standardized intelligence tests.

In order to critically review the Jensen article, one must examine the premises of the concepts extrapolated from the various disciplines which Jensen uses. In other words the principal components of the article should be scrutinized by experts of the respective areas. That is, a researcher should review his methodology and research techniques; a geneticist should evaluate his exposition on genes and heritability; an anthropologist should comment on his conception of race; and a psychologist should investigate Jensen's intelligence. This paper will be concerned with the two latter concepts, race and intelligence.

INTELLIGENCE

A very serious problem, yet an unconcern of Jensen, is that he easily accepts ambiguous terminology without investigating the precise operational definition. Examples of this oversight are his imprecise uses of terms such as race and intelligence. In discussing what intelligence is Jensen said, "There is no point in arguing the question to which an answer cannot be found. An answer to the question as to what intelligence really is." ¹ If there is no point in arguing about what intelligence really is, then there is no point in knowing the truth about intelligence or for that matter IQ. It seems that Jensen is not interested in the truth of intelligence, but he is more concerned in the opinions about the truth of intelligence. In effect, Jensen in stating that since intelligence is too difficult to define operationally, one should accept the common sense notion of intelligence.

In an article written by Jensen in 1970, "Can We and Should We Study Race Differences," which appeared in a recent publication of the American Anthropological Association, Jensen states, "Intelligence is an attribute of persons. People have always had a subjective impression of brightness or capacity within other human beings." ² Jensen makes an analogy between intelligence and temperature.

Just as the thermometer was invented to objectify, to quantify and to measure temperature with a high degree of reliability, similarly is the situation in the case of intelligence tests. It appears that Jensen has more confidence in the validity and reliability of intelligence tests than do some test constructors. For example, Alfred Binet, the inventor of IQ tests, realized the limitations of his approach: he strongly opposed any concept of fixed intelligence. Nevertheless, Jensen continues his discussion of intelligence by stating that the overall G-factor is reliably and validly measured with standardized intelligence tests.

Another of Jensen's indefensible errors which is exemplified throughout his work has been the use of intelligence and IQ synonymously. In his controversial article he writes, "To object to this procedure by arguing that the IQ cannot really be measured, or that IQ is not the same as intelligence, is to get bogged down in semantic morass."³ Anne Anastasi the noted psychometrician in her discussion of the meaning of IQ says, "To the layman, the IQ is not identified with a particular test, but it is often a shorthand designation for intelligence. First, intelligence should be regarded as a descriptive rather than an explanatory concept. An IQ is an expression of an individual's ability level at a given point in time, in relation to his age norms."⁴ To constantly interchange the measured IQ for the construct, intelligence, deserves the scathing criticism which has been launched upon Jensen. Robert L. Williams, director of the Blacks Studies Program at Washington University and National Chairman of the Association of Black Psychologists responded to Jensen by the following: "There is an erroneous equation made between IQ and intelligence; the error leads the general population to the false conclusion that blacks are inferior to whites in ability. Moreover, it is ridiculous to think of inheriting an IQ which is nothing more than a set of scores earned on a test."⁵

A proper definition of intelligence is one that would include the over-all efficiency and the level of complexity of an individual's cognitive processes. D.O. Hebb (1948) proposed a useful definition of intelligence. There is the genetic component which is non-observable and non-measurable. This is intelligence A. Intelligence B, which may be observed in a person's behavior and thinking, is the product of the interaction between intelligence A and the environment. In addition there is an intelligence C which is a sampling of intelligence B that can be scored in IQ or other units. Jensen's misconception of intelligence obviously is inconsistent with this intelligible and exhaustive perspective of intelligence.

RELIANCE ON PRESENT INTELLIGENCE TEST

Throughout his controversial article Jensen relies faithfully on the IQ score. Jensen becomes vulnerable in many aspects. First of all, Jensen assumes the accuracy of IQ scores as being a true measure of innate intelligence. One simply has to look at the history of mental testing to see this fallacy in Jensen's conception of intelligence. Binet (1905), being commissioned by the Minister of Public Instruction, originated intelligence testing. His purpose was to find procedures that would aid in the education of sub-normal children attending the Paris schools. In the United States the Stanford-Binet form appeared in 1916; it was simply an Americanization of the European Binet-Simon form. Therefore, in measuring intelligence in the United States one is in fact, comparing the population of the United States against the criteria for intelligence in Europe. Original research should have been performed in order to determine what is or should be pure American intelligence.

Furthermore, since the original tests were devised, no one has introduced reform or additional theoretical findings. "The format of intelligence test has remained unchanged since their invention." ⁶ What is really in question is the fact that intelligence testing does not take into account recent works which

have been done in the exploration of human intelligence and thought. For example the enlightened and creative research of Piaget is not included in the popular IQ tests. Equally, the concepts of convergent and divergent thinking are absent from these instruments. In spite of the "generation gap" between intelligence testing and up-to-date research on intelligence, Jensen uses those obsolete concepts which have been proved to contain many fallacies.

For argument sake let us now assume the validity of intelligence tests since Jensen relies heavily on them for his unwarranted hypothesis. He constantly compares the scores achieved by blacks with the scores achieved by whites. Is this comparison scientifically valid? Let's examine it. Practically all intelligence tests have been standardized by white, urban, and middle-class subjects. Since these subjects were the standardization sample, which is a representative sample of the type of subjects for whom the test is designed, how can this test validly be administered to subjects who are not white, urban or middle-class? In a discussion of variation of IQ scores per subject, Jensen realizes the inaccuracy of single IQ score. He explains that he has actually experienced disadvantaged children changing 8 to 10 points in IQ after they have been tested under more optimal conditions. On page 100 of his article that appeared in 1969, he states, "I would put very little confidence in a single test score, especially if the child is from a poor background and of a different race of the examiner."⁷ Jensen is extremely inconsistent. Doesn't he realize that the majority of the studies that he cites concerning IQ scores for black and low socio-economic status subjects were derived under the exact condition of the testee being poor and of a different race from that of the examiner, especially those studies drawn together by Shuey (1966). If Jensen was really objective he would have considered these factors as being crucial as he cited IQ differences of blacks and whites in the United States.

Let us now examine the relevance of the present intelligence tests for blacks. When Jensen uses a uniform notion of IQ to assess the intelligence of all Americans, he is assuming that in actuality the same situation, the same culture and the same range of activities are common context for both whites and blacks. When we examine American society we can see that this is hardly the case. Since IQ tests were formulated from a white frame of reference, the administration of IQ tests to blacks is an attempt to see the model behavior of whites manifested by the blacks. In more concise terms the question raised by IQ tests is, how white are blacks!

To administer the individual IQ test such as the Wechsler Intelligence Scale for Children (WISC) and the Stanford-Binet (S-B), the tester must establish optimal rapport with the testee. If whites are administering IQ tests to blacks, it is conceivable that optimal rapport may not be established because of reasons of fear, shyness or even a lack of communication. Several studies have shown that black investigators elicit from black subjects a response different from that elicited by whites (Pettigrew, 1964). One can conclude that intelligence tests never have accurately measured intelligence in blacks. Therefore, how can Jensen make such a persuasive argument on the comparison of black and white IQ scores? His contention is obviously based on fallacy.

RACE

To Jensen "Races are said to be 'breeding populations' which is to say that matings within the group have a much higher probability than mating outside the group."⁸

When one carefully notes this conceptualization of race, race becomes a nationality, an ethnic group, or simply a neighborhood. Besides, since societal factors principally determine one's mate, this breeding population definition of race has absolutely no genetic basis whatsoever. Jensen's definition is so broad until there is no real distinction made between race and species, since the criterial attribute of a species is based on the

ability of its members to mate and produce fertile offsprings.

Jensen also interjects that races are more technically viewed by geneticists as population having different distributions of gene frequencies. Even in this recounted definition of race, Jensen is selective in his language. He does not convey the complete meaning intended by geneticists. Races are populations having different gene frequencies in regards to a particular trait (polymorphism). Bodmer (1972) observes that the definition of race in terms of differences in the frequencies of genetic polymorphism is fairly arbitrary.

From an anthropological perspective, race is an anachronistic term. Notice the deliberate use of the word term and not 'concept'. Anthropologists do not deny that people differ in certain characteristics; however, they advocate the use of a noncommittal term such as ethnic groups (Hurley and Haddon 1936). "That many differences exist between different groups of human beings is obvious, but the anthropological conception of these is erroneous, and the anthropological approach to the study of their relationships is unscientific and pre-Mendelian."⁹ From where does the term, race, emanate?

The term race was actually first introduced into the literature of Natural History by Buffon who, in the year 1749, used it to describe six groups of man. This term merely meant a sub-division of a species. Buffon recognized that all human beings belonged to a single species, and it was merely convenient to distinguish between certain geographic groups of man. Thus, from the outset the term was understood to be purely arbitrary and a simple convenience.

However, rather than thinking of race as an arbitrary convenience in classification, the anthropologist of the nineteenth century took this crude eighteenth century notion and erected a tremendous terminology and methodology about it, deceiving himself in the belief that he was dealing with an objective reality (Montagu, 1964). These anthropologists for nearly two centuries were directing their attention toward the task of establishing criteria by whose means races of man might be defined. All had taken for granted the anthropo-

logical conception of race which stated that there exists in nature groups of human beings comprised of individuals each of whom possesses a certain aggregate of character which individually and collectively serve to distinguish them from the individuals in all other groups. The chief objection to the term 'race' in reference to man is that it takes for granted as solved problems which are far from being so and tends to close the mind to problems to which it should always remain open.

To sum it up, the indictment against the earlier anthropological conception of race is (1) that it is artificial; (2) that it does not agree with the facts; (3) that it leads to confusion and the perpetuation of error; (4) and that for all these reasons it is meaningless, or rather more accurately such meaning as it possesses is false (Montagu, 1964).

Most anthropologists today use a genetic definition of races as populations which differ in the frequency of some genes (Livingstone, 1964). This definition is consistent with Jensen's breeding populations; however, there is much confusion with this conception of race. For example, if one genetic character is used, it is possible to divide a species into subspecies (races) according to the variation of this character. If two characters are used, it may still be possible, but there will be some "problem populations". As the number of characters increases it becomes nearly impossible to determine what the actual races really are.

Mayr (1963) attempts to explain genetic variation within a species by separating this variation into three categories: (1) clinal variation, (2) geographic isolates, (3) hybrid belts or zones of intergradation. The method as well as his concepts implies an explanation of the variability which it labels. There is no need for the term race as Jensen faithfully employs. Furthermore, Mayr's different concepts of the way in which to explain genetic variability among the populations of a species accord with the mathematical theory of population genetics.

Instead of presupposing that there are differences in gene pools which affect intelligence, Jensen should take a more objective, investigative stance. Why can't he think thusly? Here is a population. Let me go ahead and find out what it is like. What are its internal likenesses and differences? How does it resemble and differ from other populations? Let me then operationally describe what I have found, that is, in terms of the data, and not by conditions demanded by a pre-existing term (race).

Human genetic variability can be described in terms of the concepts of cline and polymorphism (Huxley, 1955). The variability in the frequency of any gene can be plotted in the same way that temperature is plotted on a weather map, and this description of genetic variability can describe all of it and implies no explanation whatsoever. Then one can attempt to explain this variability by the mathematical theory of population genetics. This is a very general theory and is capable of explaining all gene frequency differences without using racial analysis.

In concluding this discussion of race, the best solution to this problem of using ambiguous language which promotes confusion of thought is to abandon the pseudoscientific investigations of race and intelligence. Jensen would argue that he as an educational psychologist has the professional privilege and responsibility to investigate any area which will advance the understanding of phenomena which surround us. I would agree one hundred percent with him. However, I do not concur with conclusions derived from hypotheses which have not been tested. I do not condone misinterpretation of data which distorts the facts. I do not agree with hypotheses which point in only one direction, that is, if there are racial differences in intelligence, then the only explanation

is that whites are more intelligent than blacks. I wonder if it has ever occurred to Jensen that his hypothesis could have a diametric explanation. If Jensen can't think in this fashion, then he should not investigate racial differences in intelligence because it would be obvious that he has an IQ problem.

Race and Intelligence

When one really examines these two concepts as discussed in this paper, one sees that race has to do with physical traits and intelligence relates to mental abilities; however, how can one realistically associate genetic, physical characteristics with intelligence? Are taller persons more intelligent than shorter ones? Are men more intelligent than woman? Are persons with blue eyes more intelligent than brown-eyed individuals? Are white-skinned individuals more intelligent than black-skinned persons? Obviously, to intelligent people, whether short or tall, male or female, blue-eyed or brown-eyed, black or white, certain types of bodies do not go with certain minds.

If Jensen is really interested in investigating intelligence in physically different groups of people, let him first find and isolate the gene which determine intelligence. Let him then demonstrate the frequency of these genes in the physically varied populations. Only then can Jensen begin to espouse a genetic theory of the heriability of intelligence.

Jensen has not been the only recent advocate of a genetic theory to explain the differential intelligence scores of blacks and whites. In his recent book, Race, Intelligence and Education, Eysenck (1971) asserts that experts would agree that all the evidence to date suggest the strong

and overwhelming importance of genetic factors in producing the great variety of intellectual differences which we observe in our culture, and much of difference observed between certain racial groups. Eysenck makes this claim without providing any supportive details. However, there is evidence which points to the contrary, that is, psychologists do not think that genetic differences are implicated in the differential IQ score of blacks and whites in America. Pettigrew (1964) reported that he was able to find only three American psychologists in the mid - 1960' out of about 21,000 members of the American Psychological Association, who were prepared to conclude in print that genetic factors are implicated in the mean IQ difference between the races. Eysenck and Jensen both make assertions concerning the consensus of the 'experts'; however, these statements are never documented.

One of the more persuasive arguments which has been advanced in support of the genetic hypothesis is what has been referred to as the 'a priori' argument (Colman, 1972). Jensen's version of the 'a priori' argument is the following: "...the myth of racial equality, while more acceptable in principle to any liberal and well-meaning person than its opposite, is still a myth: there is no scientific evidence to support it. Nearly every anatomical, physiological, and biological system investigated shows racial differences. Why should the brain be an exception"¹⁰ Even though this argument has a convincing string in it, the empirical premise of it is false. After an authoritative review of the numerous published studies on certain alleged differences between the brains of black and white Americans, Tobias (1970) concluded that there is no acceptable evidence for such structural differences in the brains of these two racial groups; and certainly nothing which provides a satisfactory anatomical basis for

explaining any difference in IQ or in other mental or performance tests, in temperament or in behavior (Colman, 1970).

The proponents of this theory of heritability of intelligence in races would not end their stance even after there is no evidence that black and white brains are different. They would insist that there must be some undiscovered biochemical basis to IQ difference between people. From a genetic point of view, however, there is no reason to expect any consistent racial differences, as Bodmer and Cavalli-Sforza (1970) observed: "As geneticists we can state with certainty that there is no 'a priori' reason why genes affecting IQ, which differ in the gene pool of blacks and whites, should be such that on the average whites have significantly more genes increasing IQ than blacks do".

Thus, we can see that the 'a priori' argument, which appeared seemingly convincing, turns out to be illogical on two accounts, in addition to being based on an empirically unsubstantiated premise.

If Jensen really thought about the black populations of the United States, he would abandon his argument altogether. Jensen speaks of racial differences between black and whites as if he is dealing with two genetically discrete populations. Black or 'Negro race' is not a genetic definition of Americans but it is a social one. In this particular instance the genetic and social definitions are tremendously conflicting. Jensen takes the social definition and attempts to apply genetic principles to it. Since most black Americans have many of the same genes as whites, as a result of miscegenation, and a substantial numbers of whites have black recessive genes, doesn't Jensen realize that he is dealing with the same genetic population? If he were to seek similarities rather than differences, he probably would be more successful.

CONCLUSION

THE GENETIC FALLACY

The belief that human populations differ in their inherited mental qualities has been one of the basic premises of racist thought. The author does not intend to accuse Jensen of being a racist; however Jensen does use conclusions formulated by racists, Shuey (1958) and Garret (1961). Arguing that "The weight of the evidence favors the proposition that mental ability differences (and perhaps differences in personality and character) are innate and genetic", ¹² Garret claims that the scientific community had been blinded to the truth by the duplicity of Franz Boas, Communists, Jews, and sentimentalists (Garret, 1961).

The issue presently discussed is that of the racist philosophy which can use the Jensen argument to justify its ideology. The specific formulation of this genetic doctrine varies from period to period, but the essence is always the same. Some races are said to inherit a capacity for abstract thought, others for learning only by rote. Jensen makes the same argument.

At the end of his controversial article, Jensen (1969) makes an implication for education. First, he distinguishes between two geneotypically distinct processes underlying learning. The continuum ranges from "simple" associative learning which he calls Level I to "complex" conceptual learning which he identifies as Level II. Jensen believes that schools maximize the importance of Level II and that other strengths in children, whose abilities are not of the conceptual learning which he identifies as Level II and that other strengths in children whose abilities are not of the conceptual level should equally be utilized. Subtly, Jensen is implying that because of genetic endowment black children are only capable of associative learning. Therefore, the schools should be cognizant of this fact and not challenge

black children with conceptual learning. Jensen supposedly is unaware that his educational implication coincides with 'benign' policies of avowed racists.

Furthermore, Jensen's concept of two levels of learning, in blacks and whites (rote-memory learning vs. creative-conceptual learning, respectively) also serves to deny the validity of black demands for equal education.

The unscientific character of Jensen's learning theory has been examined by educators who have pointed out that Level I - Level II system is a gross oversimplification and distortion (Cronbach, 1969). If taken seriously, this arbitrary dichotomy would justify two separate systems, one for training blacks in mechanical skills, and the other for educating whites in the humanities, sciences and professions (Thomas and Sillen, 1972). Jensenism would confer scientific credence to the present practice of assigning blacks to vocational training and relegating them to lower level jobs which require no abstract thinking ability.

For the white racist, the genetic argument offers an apparently scientific basis for viewing blacks as inferior. Since blacks and whites inherit different physical characteristics such as, skin color and hair texture, why not different psychic structures? The next step in this racist direction is to assert that the intellectual potential of blacks is genetically limited, as compared to whites. To recognize this presumed fact is "objectivity", to deny it is "sentimentalism".

Jensen and his supporters have raised a loud cry about their freedom to investigate genetic racial differences in intelligence. They charge their critics with trying to suppress them for political reasons. This

is a false issue. As this paper has indicated, the criticism leveled by the scientific community against Jensen has essentially dealt with the unscientific nature of his argumentation. One would legitimately expect an investigator in this field to exercise special care because of the ever-present danger that his unverified assertions and hypotheses can be exploited for racist purposes (Thomas and Sillen, 1972).

Personally, Jensen should be more responsible, scientifically. That is, he should not make assumptions about the meaning of blacks and white differences in intelligence until he can experimentally control the environment of his subjects. This is an extraordinary complex area of study, with many variables operating that have not been defined, let alone subjected to systematic analysis. Highly pertinent is the comment on Jensen made by black psychiatrist James P. Comer, Associate Dean of Yale Medical School, emphasizing that careful and responsible scholarship must be protected, but "it is not responsible science to make assumptions about the meaning of black and white differences when the 'scientist' does not know the black experience or fully understand or take into account the implications of the experiential differences. Few researchers have made a systematic appraisal of the impact of the inequitable and traumatic social policy."¹³

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